
Project Backgrounder

Calling America's Lifesaver

The U.S. Coast Guard — “America’s Shield of Freedom” — provides an invaluable service to citizens of this nation. As the round-the-clock protector of America’s inland waterways and coastlines (including 361 ports and harbors) the Coast Guard provides a myriad of services along roughly 95,000 miles of U.S. coastlines. These services include:

- Search and rescue (SAR) missions to aid both recreational boaters and commercial mariners;
- Law enforcement activities such as drug interdiction and immigration patrols;
- Expanded national defense and homeland security duties in support of the war on terrorism;
- Environmental response to assist in the cleanup of oil and chemical spills; and
- Other operations in support of maritime safety and security.

The Coast Guard is part of the U.S. Department of Homeland Security (Tom Ridge, Secretary).

Expanding Mission

The Coast Guard is best known worldwide for its search and rescue (SAR) mission expertise that dates back more than 200 years to the earliest days of the Revenue Cutter Service and Life-Saving Service.

Today, despite the nation’s best efforts to prevent maritime accidents, the Coast Guard responds to approximately 60,000 emergency calls and saves nearly 5,000 lives in an average year. In addition to responding to communications from other Coast Guard Stations and vessels, Coast Guard watchstanders respond to emergency signals and calls that are delivered from civilian commercial and recreational boaters via cell phones, handheld VHF signals, Marine VHF signals, HF and MF signals, flares, flash lights, and flags.

Coast Guard SAR response involves multi-mission Stations, cutters, aircraft, and boats linked by communications networks. The National SAR Plan divides the U.S. area of responsibility into internationally recognized inland and maritime SAR regions, with the Coast Guard acting as the maritime SAR coordinator. To meet this responsibility, the Coast Guard maintains SAR facilities on the East, West, and Gulf coasts, in Alaska, Hawaii, Guam, and Puerto Rico, as well as on the Great Lakes and inland U.S. waterways.

Communication Limitations

The communications network that currently acts as the backbone to the Coast Guard's SAR efforts is the National Distress and Response System (NDRS). Established more than 30 years ago as a sort of "maritime 911," this VHF-FM-based system has a range of up to 20 nautical miles along most of the U.S. shoreline. While this system has served the Coast Guard well over the years, it consists of out-of-date and non-uniform equipment and includes numerous communications limitations. These limitations include:

- Limited direction finding capability;
- Numerous communications coverage gaps;
- Lack of communications interoperability with Coast Guard's various partners and customers; and
- Single channel radio operation, which prohibits the ability to receive radio calls when the system is engaged in a transmission.

The Solution: Rescue 21

In October of 2002, the U.S. Coast Guard began modernizing the 30-year-old NDRS. The Coast Guard's antiquated SAR communications and data systems technology is being replaced by newer, more advanced, and more effective communications technology developed by General Dynamics Decision Systems under a project called "Rescue 21."

System implementation of Rescue 21 kicks off in Financial Year (FY) 2003. Deployment plans call for completion of system installation in all 46 Coast Guard regions coast-to-coast by the end of FY 2006.

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About Rescue 21

Rescue 21 is an advanced search and rescue (SAR) communications system that helps the Coast Guard more effectively locate and assist boaters in distress. The new system — fully operational by September 2006 — replaces the Coast Guard's current communications system, the National Distress Response System (NDRS), built in the 1970s. Among other capabilities, Rescue 21 enhances line-of-site coverage, increases position localization on a VHF-FM transmission, increases the number of voice and data channels from one to six, and improves communications and information sharing between Coast Guard units and their federal, state, and local partners. Rescue 21 will save lives in the 21st century.